Message

From: Nadine Kotlarz [nkotlar@ncsu.edu]
Sent: 4/9/2018 12:05:10 PM
To: Strynar, Mark [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5a9910d5b38e471497bd875fd329a20a-Strynar, Mark]
CC: McCord, James [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=McCord, James]; Detlef R. U. Knappe [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=user17c3f77b]; Lindstrom, Andrew [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=04bf7cf26aa44ce29763fbc1c1b2338e-Lindstrom, Andrew]
Subject: Fwd: PFAS analysis in Blood
Attachments: 5991-8656EN-D3.pdf; Serum method development 0405-040618.pptx

Good morning, Mark,
I can't come to EPA today but I will be there all day tomorrow. I wanted to share my notes with you in case you can move forward with the serum method development.

I grabbed some screen captures from the Orbitrap last week (see attached slides and comments below the slides). The major takeaways were:
1. 50 uL serum method + 25 uL injection volume gave best response for C8-C10, PFOS, and PFHxA in SRM 1957 but peak shape for C8-C10 compounds was only great in one of the triplicate preps
2. Response for nafion byproducts 1 and 2 looked good in terms of peak shape and proportional increase in signal from 1 ng/mL to 5 ng/mL spikes
3. We did not see 1 ng/mL or 5 ng/mL spikes of GenX or PFMOAA in SRM 1957 or calf serum
4. There is significant PFMOAA background

James said he was able to modify the method on Friday and did start to see GenX but he thinks purchasing a larger sample loop (up to 100 uL) will be helpful.

Some ideas for next steps:
1. test whether we can see 5 ng/mL GenX in methanol
2. prepare dilution series of GenX and PFMOAA and see where their response drops off
3. clean the source to reduce noise for PFMOAA
4. increasing the ratio of ACN:FA (acetonitrile was added at 10x the volume of formic acid used in the rodent serum method (Reiner et al., 2009))
5. increase the injection volume with increased sample loop size
6. consider the filters in the agilent paper Detlef shared (see attachment below) to improve signal/noise

Thanks,
Nadine

---------- Forwarded message ----------
From: **Detlef Knappe** <knappe@ncsu.edu>
Date: Thu, Apr 5, 2018 at 4:02 PM
Subject: Fwd: PFAS analysis in Blood
To: Nadine Kotlarz <nkotlar@ncsu.edu>, "Strynar, Mark" <Strynar.Mark@epa.gov>

Useful for serum method?

---------- Forwarded message ----------
From: <tarun.anumol@agilent.com>
Date: Thu, Apr 5, 2018 at 3:36 PM
Subject: PFAS analysis in Blood
To: knappe@ncsu.edu

Here is the application using EMR-L for reoval of lipids and protiens from Blood for analysis of PFAS.

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